MALAY TO ENGLISH SIGNBOARD CONVERTER USING AUGMENTED REALITY

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SUPERVISOR'S DECLARATION

I hereby declare that I have read this thesis and in my opinion, this thesis is sufficient in terms of scope and quality for the award of the degree of Bachelor of Computer Science (Graphics & Multimedia Technology).

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STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at University Malaysia Pahang or any other institutions.

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ABSTRAK

Maklumat papan tanda memainkan peranan penting dalam masyarakat kita. Papan tanda sering ringkas dan langsung, dan maklumat yang mereka sediakan biasanya sangat berguna. Walau bagaimanapun, orang asing mungkin tidak memahami bahasa yang papan tanda itu ditulis, dengan kehilangan semua maklumat penting yang mereka miliki, mereka juga menimbulkan masalah atau bahkan risiko ketika kita tidak mengenalinya. Sebagai contoh, orang asing mungkin tidak mempunyai keupayaan untuk memahami tanda di negara asing yang menentukan amaran atau bahaya. Laporan ini adalah mengenai aplikasi terjemahan papan tanda maju untuk mudah alih dengan menggunakan teknologi realiti tambahan. Realiti diperkatakan menerangkan teknologi ini adalah peningkatan pengalaman maya dengan menambahkan unsur-unsur persekitaran sebenar. Laporan ini juga membuat perbandingan antara beberapa aplikasi terjemahan papan tanda yang sudah ada di pasaran. Projek ini pada dasarnya direka untuk pelajar asing dan pensyarah asing.Dengan masa kini inovasi AR, pengguna boleh berinteraksi dengan model 3D dan maklumat lain yang disediakan yang ada dalam aplikasi. Permohonan ini biasanya dibangunkan menggunakan Autodesk Maya, Android Studio dan Perpaduan dengan pakej Vuforia. Pembangunan projek melibatkan pendekatan Addie dalam membina aplikasi.

ABSTRACT

Signboard information plays an important role in our society. The signboard is often concise and direct, and the information they provide is usually very useful. However, the foreign may not understand the language that the signboard is written in, with the consequent loss of all that important information also they may pose problems or even risk when we are not acquainted with it. For example, foreign might not have the capacity to understand a sign in a foreign country that specifies warnings or hazards. This project is about developed signboard translation application for mobile using augmented reality technology. Augmented reality describes this technology is an enhancement the virtual experience by adding elements of the real environment. This project is basically designed for foreign students, foreign lecturers, and visitors. Using of AR innovation, users can interact with the 3D models and other information provided which existing in the application. This application is generally develop using Autodesk Maya, Android Studio and Unity with Vuforia package. The project development involves Addie approach in building up the application.

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LIST OF ABBREVIATIONS

AR	Augmented Reality
SigAR	Signboard Augmented Reality
VR	Virtual Reality

CHAPTER 1

INTRODUCTION

1.1 Introduction

This project is about to create simple signboard translator application using augmented reality technology. The signboard translator will translate the Malay language into the English language give implications of the words deciphered. The application we created enables the users to get text translated as simple as a catch click. The camera catches the content and returns the interpreted outcomes(I, G, & S, 2017).

Augmented fact is the science that grows our physical world, including layers of advanced realities onto it. Unlike Virtual Reality (VR), AR does not create the total artificial environments to substitute genuine with an advanced one. AR appears in direct perspective of the existing environment and gives sounds, recordings, representations to it. A perspective of the physical genuine condition with superimposed PC produced pictures, along these lines changing the impression of the truth, is the AR Nowadays, expanded reality advancement get thought all designer. New data is anchored by the current condition. The enlarged reality enhances the point of view of the client and the connection with the client's condition. Computer generated Reality (VR) in contrast to increased reality, which is the advances that influence a mimicked world that to can absolutely drench in the counterfeit environment(Kipper, G. furthermore, Rampolla, J., 2012).

The first useful AR frameworks that gave immersive mixed reality encounters to users were imagined in the mid-1990s, beginning with the Virtual Fixtures system created at the U.S. Air Force's Armstrong Labs in 1992. The first commercial augmented reality encounters were utilized to a great extent in the excitement and gaming organizations, yet now unique enterprises are additionally getting interested

about AR's conceivable outcomes for instance in learning sharing, instructing, dealing with the data surge and sorting out far off gatherings. Enlarged the truth is likewise changing the universe of training, where substance might be gotten to by examining or review an image with a cell phone(Watanabe, Sono, Yokomizo, & Okada, 2003). Another model is an AR cap for development specialists which show data about the building locales.

Figure1.1 Virtual Fixtures – first A.R. system, 1992, U.S. Air Force, WPAFB

During this advanced innovation in AR, many fields have started to use and associated AR development, for instance, in designing which use to picture building adventures and in the gaming business which empowered the players to have a trial of cutting-edge preoccupation that can be played in a certifiable circumstance. Advanced innovation in AR has brought the interactivity and make everything turn out to be more practical to the user (Branch, 2010). The data about the things incorporates us are secured and showed up on the screen of our devices, for instance, cell phones and tablets(Specht, M., Ternier, S. and Greller, W., 2011).

1.2 Problem Statement

Moving to better places for further education is overwhelming for most of the individuals since they get the opportunity to encounter other individuals' societies.

However, it is a destruction to be in a foreign country only not to understand something that goes around you every day. Over the ongoing years, we have discovered that there is a dialect boundary for the understudies coming into Malaysia to study. It has tested to be difficult for them to get the particular that means of words because most of the words in work areas and public places are written in Bahasa language. Because of the issue noted above it is our obligation to solve the language barrier for international students, international staffs, and visitors. We have determined to develop the ubiquitous real-time visual translator using augmented reality for Bahasa language. Translation via augmented reality application must be accurate and extra precise for the users. The fact that being unable to understand what different people are saying is mentally stressing, therefore causing a language barrier between nearby local people and international people that is, the people from various countries.

1.3 Objectives

i. To study some available AR signboard translator applications.

ii. To design and implement signboard translator using augmented reality system.

iii. To evaluate the effectiveness of using AR signboard translator application.

1.4 Scope

i. The translation will be from Bahasa to English.

ii. They can translate the signs by using the apps on the laptop or smartphone.

iii. The target users of this system are non-local those don’t have knowledge about Bahasa language.

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